

Early bridges and changes of the land and water surface in the city of St. Paul /

Josiah B. Chaney

EARLY BRIDGES AND CHANGES OF THE LAND AND WATER SURFACE IN THE CITY OF ST. PAUL.*

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BY JOSIAH B. CHANEY.

At some period of the dim past the Mississippi river has washed the bluffs on each side of its present comparatively narrow channel. An examination of the fronts of these bluffs in St. Paul, and elsewhere, proves the above statement to be correct beyond question, I think. But the subject to be treated of in this paper is intended to be limited pretty closely to the period of the existence of St. Paul as the habitation of the "pale-face."

It is acknowledged, by visitors who appreciate the beautiful in nature, that St. Paul possesses, to an exceptional degree, a varied and pleasing landscape. Elevations from which can be viewed long stretches of river bluffs on the one hand, and a broad expanse of charmingly undulating surface of land on the other, are to be found in various parts of the city. Very few, if any, cities in the land are so highly favored in this respect by nature as is St. Paul.

Look for a moment at our parks. Nature provided and indicated the places where they should be. All that man had to do was to secure and ornament the natural sites before they were ruined by men whose only standard of value is the amount of money they can extract from a given place.

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St. Paul has already lost several of its most beautiful park sites by man's greed for money. As proof of the truth of this statement, I would call attention to the stone quarries on the river front of Dayton's bluff; and to the buildings, good, bad, and indifferent, erected along the river front from Bridge Square to Hill street. These two portions of the banks of the Mississippi especially 132 should have been dedicated to the public forever as parkways, and properly ornamented as such, at the expense of the taxpayers. It would have been a good investment for all concerned. Our Park Board has been in existence only seventeen years, instead of forty-five, as it should have been, and it has all its life been hampered for lack of funds; but, notwithstanding its financial poverty, it has accomplished wonders. Look at Como Park, for instance, which wins the admiration of all visitors, and also of our own people.

You may think I am not adhering to my subject any better than the average clergyman does to his text, but what I have said has a bearing upon what will follow, to an extent that I think justifies its saying. Without further preliminary, however. I will proceed to specify some of the many changes that have taken place within a comparatively few years, taking them mostly in the order of occurrence. The first to notice is the building of the first bridge across the Mississippi river at St. Paul.

FIRST BRIDGING OF THE MISSISSIPPI AT WABASHA STREET.

On March 4, 1854, an act passed by the Territorial Legislature, creating the St. Paul Bridge Company, was approved by the governor, Willis A. Gorman. On the same day he approved the act incorporating the city of St. Paul.

The incorporators of the Bridge Company, named in the act, were Lyman Dayton, J. C. Ramsey, John R. Irvine, J. W. Bass, W. G. LeDue, W. R. Marshall, Joseph R. Brown, George L. Becker, William Ames, N. Myrick, A. L. Larpenteur, J. W. Simpson, C. N. Oakes, M. E. Ames, and Louis Robert. They were given the usual corporate rights. The company was given authority to select any site, and might build to the west shore, or from

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bluff to bluff, as the directors might deem best. No bridge could be built by any other party within one mile on either side, without the consent of this company, during the life of the charter, which was thirty-five years from the completion of the bridge. The franchise was to be forfeited if a commencement was not made within two years from the date of the act; and it allowed five years in which to complete the work.

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In June, 1856, J. S. Sewall was appointed engineer, and he made the plans and was superintendent of construction. A small amount of work was done during the following fall and winter. In the spring of 1857, arrangements were made to push the work; but on September 15, 1857, the mechanics and laborers refused to work any longer unless they were paid up to that date. Previous to this last date, the Legislature in March, 1856, had extended the time for commencing until July 1 of that year, and had designated four years from the date of the act in which to complete the bridge.

The company ran short of funds, and applied to the city for aid. The Legislature, in March, 1858, authorized the city to loan to the company city bonds to an amount not exceeding one hundred thousand dollars, provided the proposition was ratified at an election to be held on the 24th of said March. The result of the election was 1,562 votes for the proposition, and 19 against it. April 26, 1858, the company executed a bond and mortgage to the city, covering all its property and franchises as security for the prompt payment of the interest on the bonds so loaned and of the principal when due. The history of the result of that financial transaction is too long for this paper, and I will not follow it further than to say that the city issued its bonds for the full amount authorized, in lots of twenty-five thousand dollars each, the first \$25,000 being granted April 6, 1858; the second on June 1, 1858; the third on September 21, 1858; and the fourth and last on January 4, 1859. The company generally failed to pay the interest, and, as they were city bonds, the city had to do it.

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After the bridge was completed, which was in June, 1859 (not in 1858, as Williams has it), the city, by an agreement with the company, took charge of the bridge and used the gate receipts, above expenses, towards paying the interest on the bonds it had loaned to the company. The city also paid numerous claims against the company, after the same had been allowed by the company. In March, 1867, by legislative authority, the company turned the bridge over to the city, the latter paying about 33 1-3 per cent to the stockholders, in city bonds, on the amounts they had paid on their stock. The city thereafter was the owner 134 in fee, as well as practically for several years previous. The amount of bonds authorized for this purpose was \$17,000. It took only \$11,382.43.

The authorized capital of the company was \$150,000. The stockholders had paid in \$48,038.81. The bridge cost \$161,855.81. It was a wood and iron trestle structure, 1,311 feet in length, commencing at the river end of Wabasha street, and ending on the West St. Paul side at what was then called Bridge street, later called Dakota avenue, and now known as South Wabasha street. The present bridge rests upon most of the original piers, but being considerably longer, required additional ones. The West St. Paul end was about twelve feet above the ground, to insure its safety against inundations which that flat was subject to once or twice a year. The company, of course, had to grade up to the floor of the bridge; and in 1861 the city graded entirely across the flat, and put in two or three substantial bridges over small creeks. The roadbed was raised several feet above the level of the flat.

The bridge became a free bridge at noon, on the 18th day of November, 1874, coincident with West St. Paul becoming a part of the city of St. Paul, as its sixth ward.

GRADING EAST SEVENTH STREET AND HOFFMAN AVENUE.

The next expensive improvement projected was to grade East Seventh street from Kittson street to the eastern city limits, to a temporary grade. To this end, on October 16, 1860, the city council instructed the city engineer, Gates A. Johnson, to prepare plans

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and estimates of the cost of this proposed work. At the next meeting of the city council, October 30, the engineer reported that the total cost would be \$16,683, as follows: One stone arch culvert across Trout brook, \$2,333; one stone arch culvert across Phalen creek, \$4,350; embankment and excavation, \$10,000. It was considered too costly for the property owners to bear, and the project was allowed to sleep more than ten years, until May 2d, 1871, when Alderman Ferdinand Willius revived it by offering the following:

Resolved, That the Commissioner of Assessments be authorized to advertise for plans, specifications, and estimates, for the construction 135 of a bridge, of wood, or wood and iron combined, with stone or iron piers, over the Lake Superior and Mississippi railroad and Phalen creek, on Seventh street.

The resolution was adopted, and on June 8, 1872, after a sleep of another year, the Board of Public Works, which I think had been created in the meantime, reported the engineer's estimate of cost as follows:

Extension of Trout brook culvert \$2,000

Masonry and bridge over the St. Paul and Pacific railroad 4,000

Earth embankment between Kittson street and Bradley street 5,500

Grading between Bradley street and Lake Superior railroad 500

Trestle bridge, plan of 1871, over Phalen creek valley 13,000

Grading from east end of trestle bridge to Pearl [now Margaret] street 13,500

Riprapping embankment, to prevent washing 1,200

Incidentals, and costs 2,500

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Estimated total \$42,200

The contract for the improvement was awarded to J. W. Smyth, for \$39,400, and was dated June 24, 1872, and expired October 1, 1872,—a few days over three months! Of course he could not do it within the life of that contract. More time was given him, and the work was completed on August 22, 1873.

Until this improvement was completed there was but one carriage road from the city to the summit of Dayton's bluff. It ran by the way of the line of Fourth street (which was then simply a bad road), across Trout brook and Phalen creek; thence to Commercial street, at the foot of the bluff, and to what is now Conway street; then up a long, steep and stony hill, past the Dayton residence, which stood and still stands near the brow of the bluff, at the northeast corner of Hoffman avenue and Conway street, 25 or 30 feet above the grade of the former.

Hoffman avenue was first graded in 1873, the same year in which the East Seventh street improvement was completed. Patrick Nash was the contractor. The north end of it was made to connect with the Seventh street bridge on grade. It had a down grade to Conway street, then an up grade to the summit of the hill.

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REMOVAL OF BAPTIST HILL.

Leaving Dayton's bluff to get along with two carriage approaches from the west for the next eleven years, we will return to the lower part of the city, where most of the heavy wholesale and manufacturing business is located, as well as the railroad general offices, freight houses, etc., to see the changes wrought there within the last forty-two years. For those whose residence does not date back to 1862, the contour of this portion of the city in its natural condition is shown on S. P. Folsom's official map of St. Paul in 1855, as no material changes took place before 1862.

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Nearly all the space between the bluff and the river, from Sibley street to Dayton's bluff, and for some distance beyond Fourth street, up Trout and Phalen creeks, which at this point are in one valley, was a bottomless bog.

Occupying the space between Jackson street and Broadway, from Fourth to Seventh street, stood a high drift hill, called by various names, as Mount Pisgah, Baptist hill, and Burbank's hill. It was best known as Baptist hill, so called from the fact that a Baptist church once stood upon its summit. The northeast corner of this hill crossed Seventh street, and the southwest corner crossed Fourth street. A spur of it followed the line of Fifth street to Neill street, or a little below, and thence up Neill to Seventh street, connecting there with one running from Kittson street to Westminster avenue, which forms the left bluff of Trout brook for a long distance up the stream.

Sibley street was graded through Baptist hill in 1876, making a cut of fifty-one feet. I think that was about the highest part of the hill, and the point from which cannon salutes were fired, during the Civil War, in honor of Union victories. Fifth street was graded through this hill in 1877; Sixth street was also graded through it in 1877; and Wacouta street in 1877 or 1878. When these four streets had been cut through the hill, they left the block bounded by them standing as a plateau about fifty feet high. The hill was composed of a heterogeneous mass of drift clay, gravel, boulders, broken limestone, and pretty nearly everything else in the way of hill-building material, It was just what was needed in other places near by, but not there. This plateau and the rest of the hill have long since disappeared, except a few isolated low 137 places that have not yet been leveled. A large portion of the material was used on lower Fourth and Third streets, to fill the bogs and other bottomless mudholes. It was free dirt, and every one was at liberty to help himself. The hill gradually disappeared, and the area bounded by the four streets named is now Smith Park.

At one time there was quite a settlement of respectable citizens on that hill. The Burbank residence, a large two-story brick house, occupied a prominent position on the river front,

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and from it a fine view could be had of the river's magnificent scenery. Among other prominent citizens who had their habitation there was the late William H. Grant, a member and councilor of this Society. On the ground once occupied by that hill, now stand massive business blocks.

GRADING FOR THE UNION DEPOT AND THE RAILROADS.

Before leaving this portion of the city I will call attention to another transformation scene, one which, for magnitude and cost, far exceeds the last one mentioned, the Union Depot Yards. Where now stands the Union Depot itself, and nearly all the space occupied by those miles and miles of steel rails in the depot yards, forty-two years ago, and several years less than that number, was a literal "slough of despond." It was fathomless and apparently bottomless. The original Union Depot building, I think, was on a pile foundation; but, whether it was so or not, the foundation settled, and the walls cracked to such an extent as to make the building unsafe. I think that it was officially condemned, and I know there was talk of doing so; but it was patched up in some way so that it did not fall. This building was burned June 11, 1884, the inside being completely destroyed. It was immediately restored and improved.

The first railroad operated in Minnesota was the St. Paul and Pacific, now the Great Northern. Its first track extended from St. Paul to St. Anthony, a distance of ten miles. Its first train of passenger cars arrived here on the steamboat Key City on the morning of June 28, 1862, and was immediately transferred to the track. In the afternoon of the same day the locomotive, William 138 Crooks, which had arrived previously, was backed down the track, coupled to the cars, and took a distinguished party of citizens to St. Anthony and back. Instead of attempting to fill in a roadbed through that quagmire, from Trout brook to the station, they drove piles and built their track on them. The River Division of the Chicago, Milwaukee and St. Paul railway also came into the city on piles through or over that quagmire, for the same reason that it had apparently no bottom. Both roads gradually

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filled in a roadbed. Now, all that flat has been filled until it is from a few feet to ten feet, or more, above its former level.

The first depot building of the old St. Paul and Pacific railroad company was a small affair, and was first located at the foot of Rosabel street. For many years past it has been in the service of other roads, its last service being for the Minneapolis and St. Louis railway. It now stands where it was last used, behind the building occupied by the general offices of the Northern Pacific Railway Company, on the east side of Broadway. This large building, also the General Offices Building of the Great Northern Railway Company, and several other heavy buildings within the bounds of that great bog, rest in a clay-pit. Some of them do not rest very well, notably a large five-story brick building at the upper side of the Third street bridge; it is cracked in several places from bottom to top.

The railroad business of St. Paul has grown to such proportions within the last few years that there is not room enough on the original flat to handle it, and the roads are reaching out in various directions for more room; they are asking for vacation of streets and alleys, and purchasing private property, so that they can extend their trackage.

The Northern Pacific Company has purchased, besides other real estate, the residence property of the late Horace Thompson, on Woodward and Lafayette avenues, which they propose to grade down for use. They had already demolished the buildings, when the tornado of August 20, 1904, came to their aid and uprooted nearly all the trees on the grounds.

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FILLING INTO THE MISSISSIPPI RIVER.

Several years ago, the exact time I do not know, the Union Depot Company, with the consent of the United States government, filled in a portion of the river, of the following dimensions: Beginning at the Chicago Great Western draw-bridge, and extending 4,300 feet down the river, to Phalen creek, with an average width of about 100 feet and a

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maximum width of about 190 feet, making a total of about 430,000 square feet, that is, about ten acres.

In 1901–02, the Chicago, Milwaukee and St. Paul Railway Company, also with government authority, filled in a strip in front of a portion of this area previously secured by the Union Depot Company, beginning at Broadway, and extending down the river to a point just below Phalen creek, leaving an opening for the creek. The length of the fill is about 3,000 feet, with an average width of about 150 feet and a maximum width of about 240 feet. The total area thus filled is about twelve acres.

In making these fills, the railroads have covered seven islands that appear on the early maps, six of which had names of pioneers. On one of these islands once stood Prince's rotary steam sawmill; it stood nearly opposite the foot of John street, between John and Olive streets. It was destroyed by fire before its site was wanted by the railroad people, and thus died respectably.

The Chicago Great Western railway some years ago acquired a strip of the river, on the west side, of the following size: The fill begins at South Wabasha street, and extends to South Robert street, with a width of about 400 feet, and also includes two blocks west of South Wabasha street, and one block east of South Robert street, making in total something over twenty acres.

The history of railway improvements in the lowertown district would be an interesting one, but would be foreign to the object of this paper; and if it were not, I am not competent to write it. I have given only so much of it as pertained to changes in the land and water surfaces, both of which are involved to a large extent.

The first grain elevator in St. Paul was located on the river bank, a little east of the foot of Wacouta street. It was built soon after the entrance of railroads to the city, and was commonly 140 called the "Delano Elevator." On one of its supporting piles was the mark

from which levels were started. The building was destroyed by fire many years ago, and its site is now buried.

THE RAVINE AT JACKSON STREET.

Before leaving the river front, I will speak of that noted ravine which the old settlers tell of to new comers, in stories that sound very much like the proverbial fish stories; but some of them, at least, are true.

Starting at Third street, between Sibley and Jackson streets, a ravine existed in the early days of St. Paul, running in a west-northwest direction, so that it entered the south line of Fourth street near the middle of the block, and continuing in the same direction, reached the west line of Jackson street at the northwest corner of that and Fourth streets, and passed on for some distance. The ravine was quite wide, and sufficiently deep to allow the river, in times of unusually great freshets, to back up into the gully as far as Jackson street to a depth sufficient to float a light skiff. The bottom of the ravine at that point was from thirty to thirty-five feet below the present grade of Jackson and Fourth streets at their junction.

On the north side of the ravine, the late Lot Moffet kept a tavern called, on a triangular sign suspended from the front end of the house, "Temperance House." The building was a wooden one, and not nearly as large as the Hotel Ryan. Jackson street had not been fully graded when I first passed by the house, but a sidewalk had been laid, and I remember that it was nearly on a level with the eaves of the house. When the street was graded, the house was nearly hidden from view a short distance away. As the street grade was raised, he would build higher, and finally he built another edifice which inclosed the original one, living in the old house until the new one had a roof on, when he took the old house out, in pieces. The city paid him several hundred dollars, in bonds, for damages on account of the street grade. He had about two stories below the street. His new edifice, on account of its peculiar and original architecture, was called "Moffet's Castle." The First National

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Bank Building now occupies its site. As the ravine was springy and the ground beneath was very soft, when 141 the erection of that building was undertaken, it was found an expensive job to get a solid foundation. The president of the bank, Mr. H. P. Upham, recently informed me that it cost them \$20,000 to get the foundation up to the water-table. Hon. C. D. Gilfillan also had similar trouble at the northwest corner of the Gilfillan Block, on the corner diagonally opposite; and others who erected business blocks along the south side of Fourth street, between Jackson and Sibley streets, had a similar experience.

Nearly all the territory from Jackson street west to Wabasha street, between Fourth and Ninth streets, tributary to this ravine, has been filled in from a few inches to fifteen or more feet, the original surface having been of a clayey composition and unreliable for heavy buildings. There are a few spots where the limestone remains in place, the principal one being the site of the Court House; but the northeast corner of that building hangs over the clay-pit, both the limestone and sandstone being absent. It is very expensive to get secure foundations in that section. The New York Life Building did not, and the northeast corner of it is gradually sinking. Twice, to my personal knowledge, they have raised the inner edge of the sidewalk, so as to make it incline toward the streets instead of the building, and several of the big granite blocks, especially on the Sixth street side, are broken.

LATER BRIDGING AND GRADING.

In 1884 and 1885, there was probably more money expended for bridging and grading in St. Paul than in any other two years of its history.

In 1883, the wooden bridge over Phalen creek on East Seventh street, built in 1873, had become so decayed as to be dangerous, and it was condemned, carriage travel being blocked. Then came the serious question of what should replace it. Finally it was decided to make a solid fill, with stone arches over the railroad tracks and creek. It was a very large undertaking, for the valley was about one hundred feet deep, and very wide, but it was deemed to be really the cheapest in the end, as plenty of material was at hand in the deep

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cuts which would necessarily be made to produce a proper grade ascending eastward to the summit of the hill. The excavated earth would have to be deposited somewhere, —another instance of Nature's careful regard for the law of supply and demand, 142 as frequently illustrated in St. Paul. The Great Northern and Northern Pacific railroads occupied Trout brook valley from bluff to bluff, and I believe they took care of that valley where a continuous steel or iron bridge spans the chasm.

The McArthur Brothers took the contract. They also regraded Hoffman avenue from Sixth to Seventh street, to correspond with the new grade on Seventh.

Oakland avenue, a street running upward along the bluff from Ramsey street to Summit avenue, was opened in 1884–5, at a cost of \$51,469.75. The city contributed \$20,000 in bonds toward its cost. The assessment for the balance was spread over a large area. The especial object for which the street was constructed was to afford an approach by street cars to the south side of St. Anthony hill. The Grand avenue line to Groveland Park traverses this avenue.

St. Paul has thirty-four iron and steel bridges, which cost \$2,708,641.06; and twenty-six built of wood and other material, at the cost of \$150,413.21. The total investment of this city in bridges now in use is thus \$2,859,054.27. I will give the original cost of a few of the most important and expensive of these bridges, and the length of some of the long ones.

East Seventh street, over Trout brook and Phalen creek valley \$73,614.68

Robert street, length, 1,545 feet 318,572.78

Marshall avenue, length, 1,273 feet 151,097.03

Fort Snelling, length, 1,078 feet 171,146.78

Selby avenue, length, 723 feet 91,023.75

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Como avenue 50,047.76

Dale street 53,941.12

Arcade street 57,097.07

Smith avenue, "High Bridge," length, 2,773 feet 479,527.70

Sixth street, length, 1,156 feet 148,039.98

University avenue 123,046.30

Wabasha street, across the Mississippi river, length, 1,530 feet 235,912.13

The foregoing are all first-class bridges.

Third street, partly of wood, length, 1,421 feet 90,315.17

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CUTS AND FILLS IN STREETS

On Dayton's bluff the cuts and fills are numerous, as may be seen from the street cars, but generous Nature has provided places to deposit the surplus material from the cuts.

When Wabasha street was opened through "Hog-back" or Wabasha hill, there was a place waiting to receive the vast amount of sand and gravel that had to be disposed of, that place being now Central Park.

When Jackson street was cut through a part of the same hill or long plateau and ridge of drift, there were marshy streets below waiting for a large portion of the material taken from the south side, and deep hollows on the north for that taken from that side

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When Mackubin street was graded north from Iglehart street, a six feet cut at Fuller street furnished the material for a nine feet fill at its crossing of St. Anthony avenue, and graduated off at Carroll street.

When Martin street (now West Central avenue) was graded west from Western avenue, a heavy cut near Mackubin street furnished material for a nine feet fill from Kent street to Dale street and beyond.

In grading St. Anthony avenue west from Western avenue, there were enough small cuts to fill all the low places on the line of the improvement. There was a cut of four to six feet between Dale and St. Albans streets and beyond. The north portion of that elevation was taken down to St. Anthony street grade, and the material (sand and gravel) was deposited by tram cars in a former lake bed directly north, between Martin street (Central avenue) and Aurora avenue.

When Dale street was graded north from Laurel avenue, it passed through three little lakes between Dayton avenue and Carroll street. There was a cut of twelve feet at Carroll street, and plenty of room on Block 25 (between Carroll and Iglehart streets) or on Carroll street west of Dale, to deposit the material taken out.

When Iglehart street was graded west from Mackubin street, there was a cut of 12¾ feet just before reaching Kent street, and 144 plenty of places in the vicinity for the surplus material. Between Dale and St. Albans streets, it passed through Larpenteur lake. It also passed through a lake between Kent and Dale streets.

When Rondo street was graded west from Mackubin street, there was a deep cut on the south side of the street, between Kent and Dale streets. Enough of the material taken out was deposited on the St. Anthony end of the late W. L. Wilson's property to raise it up to street grade, from three to eight feet, and some went to other places where needed.

I might go on almost indefinitely with similar records, but there is another branch of my subject to be considered and I will pass on to that.

CHANGES OF WATER SURFACES.

Perhaps it would be more correct to describe these changes as from water surfaces to land surfaces, for that is the result of our lakes disappearing, from any cause.

A large number of little lakes that existed within the city area only a few years ago have disappeared from the face of the earth, and dry land appears where they once rested. Go over to the east end of the city, and you can count dry lake beds by the score; and many other lakes are in the process of drying up, being mere marshes today. Soon the farmer will be plowing where they existed, "sparkling and bright." Go to the western part of the city, to Merriam Park or St. Anthony Park, anywhere, in any direction, and you will find the same drying up process in operation. Even the lake that once existed within the limits of our State Fair Grounds is only a marsh now. But to be more specific, I will mention a few, some with names and some nameless ones, that I once knew, which have passed from view.

Forty years ago, and less, there was a beautiful lake in the ravine that is now occupied by Oxford street. Its south end, when I first saw it about forty-five years ago, was somewhere near the part of the ravine where Carroll street crosses it, but may have been a little farther south; and it extended north as far as to Ellen street, one block north of University avenue. It was supposed to be a spring lake. It supported two names, Lake's lake, and Hare's lake. Mr. Hare lived on the high ground west of the lake; and Mr. Lake lived close to the west shore of the lake, also on its west side. One of the children of the latter was drowned in this lake, in sixteen feet of water. The lake had entirely disappeared at least fifteen years ago.

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When the Gas Company, a few years ago, concluded to erect a million cubic feet gas-holder on St. Anthony hill, they, for some reason, located it in the dry bed of that lake. They got along very nicely with the excavation, and had made good progress with the foundation, when suddenly water in great force burst through the crust beneath and destroyed a portion of the foundation. The consequence was, that they were obliged to run two powerful steam pumps twenty-four hours a day for several weeks, before they exhausted or subdued the flow.

A chain of three lakes, beginning near Dayton avenue, on the line of Dale street, had an outlet for the most southern lake of this series, crossing Marshall avenue through a log culvert into the second lake on the north side of Marshall avenue, which in turn emptied into a third lake that covered nearly all of Block 25 and part of Block 26, of Mackubin & Marshall's Addition. The outlet for the three was at the northwest corner of Kent and Carroll streets, crossing Kent street, and by a northeast course, passing in front of the late W. L. Wilson's old residence, under a bridge, and across Mackubin street into a valley, where it was finally absorbed. This was before any of the streets named were graded.

Iglehart street was graded through the lower one of these lakes; and Dale street was graded across and through all three of them, and put them out of existence.

Larpenteur lake was a fine body of clear water. The east end was at a little distance west of Dale street, between Carroll and Marshall streets, and it extended to and a little beyond St. Albans street. It was directly opposite the Protestant Orphan Asylum. A good many years ago a land owner, whose south line was in the water at the east end of this lake, filled in to his line, but did not improve the property. Iglehart street was graded through it, and St. Albans street across it; the remaining part was filled in, terminating its existence.

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A pretty lake that rested in a hollow between Martin street (now West Central avenue) and Aurora avenue, extending from half a block east of St. Albans street to a little west of

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Grotto street, was put out of existence by grading Fuller street through it and St. Albans and Grotto streets across it.

Another small but pretty lake existed where the Madison School Building now stands. When the School Board purchased the property, it was in the contract that the seller should fill in the lake. The fill was about 25 feet. The material used was sand and gravel, taken from Hog-back hill, directly back of it, and was, probably the first extensive inroad made in that hill. After the lake had been put out of existence, a drive-well was put in, which furnished all the water used in the construction of the building and in the school for several years, until water mains were put in on Bluff street.

The Webster School building was erected in the midst of a large marsh that had been a shallow lake. For several years there was water in the basement. A deep cess-pool was dug on the Mackubin street side, but it gave only partial relief. Later a sewer was put in and connection was made with it, which gave full relief.

The most of Pacific Addition, two blocks, was under water when it was platted. A deep bed of peat underlies it, and extends a considerable distance south, east and west. The peat has been on fire several times, in dry seasons; at one time it burned under this Addition, and let Atwater street down several feet. The Fire Department has been called on several occasions to put out the fire, but their labor was of little avail.

Where the suburb of Macalester college is, a large but shallow lake was platted.

A beautiful little sheet of water once reposed in a fine grove of native trees on Dayton's bluff, at the junction of Hastings avenue and Cypress street of today; but when I first saw it, there were no streets or avenues visible there. Today there is scarcely enough water left of it for a duck to float on. It can properly be classed with the extinct lakes.

I have on my list, and in my memory, numerous other dry lake beds, but will not mention them, as this paper is now longer 147 than it ought to be for one evening's reading. I will

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close with a brief mention of the existing lakes and water courses within the limits of St. Paul. They are few. Leaving out the lakes connected with our city water supply, there are only two, so far as I know, and of them I shall make brief mention.

The first to which I will direct attention is called "Nigger lake" or "Dead Horse lake." This fine body of water lies in a deep basin, extending from the east side of Dale street and the south side of the Northern Pacific railway tracks east nearly to Mackubin street. It formerly extended to Farrington avenue. It had several bays, and at least one island. It crossed Maryland street and the Northern Pacific roadbed, only a few years ago. It is quite deep near the upper end, and, being fed by springs, is one of the sources of Trout brook. It contains several varieties of fish.

The other lake referred to is Lake Como, one of our park jewels now, but it came very near being one of St. Paul's extinct lakes. On September 13, 1891, only thirteen years ago. I walked entirely around it, on dry ground, at least one hundred yards inside of the water-line of fifteen years before, when what is now called Cozy lake was simply an arm of Como, with a continuous water surface. Now they are really artificial lakes, having been filled and maintained by water pumped up from artesian wells.

There are now only two visible watercourses within the city limits, I believe, if we do not count the many cool springs and brooklets of the Fish Hatchery water supply. These are Phalen creek and Trout brook, which enter the Mississippi near Dayton's bluff as one stream, though their sources are far apart. Trout brook has three principal sources, Sandy lake, McCarron lake, and Nigger lake. The outlets of the first two unite at some distance above the point where the overflow from the latter is received. They all pick up numerous small tributaries along their course.

Phalen creek is not only the outlet of Lake Phalen, but also takes the overflow from lakes Gervais, Kohlman, and their tributaries. The White Bear road crosses Phalen creek near the foot of the lake.

I have been obliged to leave out many items that I had on hand, for want of room. I am aware that the paper is too long, and that I may not have made the best selections from the material I had, but it is too late now to correct the poor selection.

Please bear in mind that every change in the relationship of land and water has resulted in an increase of land, not one of water. Hundreds of acres have been added to the land area of St. Paul within less than forty years by the drying up and filling up of our lakes and ponds, besides the forty or fifty acres reclaimed from the river by and for the railroads.